YAMS

A DESCRIPTION OF THEIR CULTIVATION ON GUADALCANAL IN THE SOLOMON ISLANDS

by

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I INTRODUCTION

Yams were amongst the first things to be given to man, according to traditional stories of Guadalcanal[1].

"The yam no doubt takes the highest place as the staple food of Melanesia"[2]. On Guadalcanal, yams, together with taro, have formed the most popular and important food. It was not a feast unless there were yams to eat, while the quality of yams was a subject of considerable discussion: the yams of the south coast, for example, were famous even outside the island for their size and sweeetness. Yams' importance as a food was almost equalled by their importance in trade both within the island and to nearby islands such as Savo, Gela and Malaita. The Longgu-Lenggo people traded yams and pigs to Langa Langa on Malaita for red shell money. The north coast people traded yams into the bush for wooden bowls ('pou pou'). The Valasi people obtained fish, coconuts and salt water from the coast-dwellers in exchange for yams, while the south coast yam cultivators sold them to the hill people for pigs, possums, and dogs' teeth. Trade was also carried on within yam-growing areas, so that if more yams were required for a feast they could be purchased for shell money (100 yams = 1 'kongana' i.e. 4 strings of red shell discs, each 6 ft. long).

The main crop was of such importance that numerous feasts and ceremonies were associated with planting, cultivating and harvesting the crop. In religion, the goodwill of the ancestors and the help of the garden spirits ('vigona') had to be achieved if a good crop was to be assured, and most ceremonies were directed towards this aim.

Casual observation, begun four years ago, led us to suspect that yams today no longer held the same importance as a food, and that their cultivation was not practised with full tradition and ceremony. This study is an attempt to record the practice of yam cultivation today and what is said to have been the practice in the past, within living memory only.

The study is based on four months' field work, spread over four years, involving twenty-four sites in five areas. Villages where gardens were visited are marked on the map. Visits were always made in company with the owner and other interested people. Questioning was undertaken on site. In the evening discussions would continue often with older people present.

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1. See Appendix 1.

2. R.H. Codrington, The Melanesians, 1891, p.319

The study was of a part-time nature. It was not possible to reside in any one village for more than a week, and it was not therefore possible to follow through a complete cycle of yam cultivation in one place; in any case this would not have enabled us to obtain a general picture of yam cultivation in all its many variants on the island. However, all areas were visited more than once and the number of different informants should ensure that the general picture is moderately accurate. Further studies would entail following an entire yam cycle in two or three localities in each different area, but this would require full-time field workers.

Because the primary aim of the study was to record cultivation methods used throughout Guadalcanal for future reference[1], the material presented here is very detailed. This knowledge is rapidly being lost because of the increasing importance of sweet potato (Ipomoea batatas) with its ease of cultivation; the western system of schooling by which children are removed from the influence of their parents and relatives; and the demand for cash which depletes the village labour force, and the ground available for yams. The greater mobility of the people today provides an alternative interest to yam cultivation.

II THE YAM

Usually yams take up to nine months to mature, so that only one main crop is produced each year. Smaller supplementary gardens are planted at other times and the yield of these, with the fact that yams store well, ensures that yams can be eaten during much of the year. The five species[2] found are shown in Table 1. A description of some varieties found within these species is given in Appendix 4. The lists may not be absolutely accurate as many varieties were described only and not actually sighted. There are seventeen languages on Guadalcanal and it is quite likely that some varieties appear more than once under different names.

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[1] Useful material on other islands in the Protectorate may be found in C.E. Fox, The Threshold of the Pacific, 1924, (San Cristoval); W.G. Ivens, The Melanesians of the south-east Solomons, 1972, (Sa'a and Ulawa); L. Maenia, Root Crops Interchange, (unpublished, copy held by British Solomon Islands Department of Agriculture) (Malaita).

[2] E. Massal and J. Barrau, Food Plants of the South Sea Islands, 1956, p.15.

III YAM PLANTING AND THE NATURAL ENVIRONMENT OF GUADALCANAL

Guadalcanal, which is ninety miles long, with a maximum width of thirty miles and an area of 2,180 square miles, has three main features:

(a) the main range of mountains which run roughly east and west and rise directly from the south coast reaching a maximum height of 8,000 ft.;

(b) the hills and ridges running north towards the coast from the mountain range;

(c) the northern plain which runs from Honiara to Rere (a distance of some fifty miles) with a maximum width of eight miles.

The island has a basically equatorial climate which is modified by the sea and the shape and elevation of the island. Particularly important is the influence of the island's topography on methods of growing yams. During the season of the south-east trade winds, the south and south-east coasts and steep mountains immediately behind are deluged by frequent, heavy falls of rain. (See Tables 2-5.) It is within this area of heavy rainfall that yams are dominant and are acknowledged as the "best". They are generally planted in September and October after the heaviest rains and therefore are growing into a "dry" period. Coursey[1] quotes Dyoly as saying that a steady supply of water is especially important between the fourteenth and twentieth weeks and goes on to say that growth normally commences about the beginning of the rainy season. It seems, however the rainfall, on Guadalcanal during the growing season is such that, even in the "dry" months, it is adequate for good growth.

At the same time the north and west coasts are protected from the direct influence of the south-east trades and instead receive a drying diurnal north-east/south-east wind. Yams on this side are planted during the same months after this dry season, and grow into a wet season.

It might happen that the heavier rainfall slows the growth of the yam. It has not been possible to compare growth rates scientifically, but informants accept that while yams take nine to ten months to mature on the south coast, they may be ready for harvest seven or eight months after planting on the north coast.

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[1] D.G. Coursey, Yams, 1967, pp. 72 and 73.

There are no rainfall figures for the interior except for Koleula (see Table 2), and for Ilu which is on the plains some four miles from the coast. It is thought that orographic rains with afternoon showers even out the rainfall distribution in the interior hills and give annual figures of 120 ins. to 180 ins. Taro grows better than yams in the interior of the island, as the elevation gives rise to lower temperatures which are as inhibiting to the growth of yams as the continual dampness.

Coursey[1] considers it advantageous if the beginning of the growing season coincides with a day length of more than twelve hours, and the latter part of the season with a shorter day. In the Solomons, planting takes place when the day is twelve hours or so in length, and

TABLE 2 - PRECIPITATION (in inches)

	Rainfall Stations			
	HONIARA average of 10 years	MARAU average of 5 years	AVU AVU average of 5 years	TANGARARE average of 5 years
January	9.8	9.43	10.31	11.63
February	9.2	10.20	8.85	17.59
March	14.1	12.15	12.37	20.06
April	10.1	10.78	12.80	9.82
May	6.2	17.70	13.92	7.39
June	3.9	18.17	20.13	5.9
July	4.5	18.94	37.55	7.22
August	4.0	17.33	30.72	5.9
September	4.0	16.71	24.89	8.19
October	6.9	16.25	23.94	12.61
November	6.1	14.11	16.49	9.04
December	7.7	13.29	15.87	10.07
TOTAL	87.72	175.06	228.35	125.42
No. of wet days	195	246	222	222

Source: Metereological Bureau, Honiara, and Department of Agriculture, British Solomon Islands Protectorate.

Note: A rainfall station (Koleula)[1] 1,500 ft. up, on the south coast, recently recorded 530 ins. of rain for year 1972, while freak falls such as that recorded in July 1965 at Avu Avu, when 110 ins. of rain fell in ten days, show the variation possible.

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[1] D.G. Coursey, Yams, 1967, p.72.

[2] Utah Development Company.

growth occurs as the day lengthens; harvesting takes place with a day length similar to that when planting took place. Perhaps where daylight varies only one hour, nine minutes per day during the year,[1] its effect on time of planting is not important.

No readings are available for cloud cover except from Honiara on the north coast (Table 4) where there is less cloud than anywhere else on the island. It is accepted that the north coast has more sun, and this, according to the local people explains why pana does best there.

People often say that 'pana' takes longer to mature than other species of yam. 'Pana' harvested at the Dala Experimental Station, Malaita[2] in 1969, was in the ground longer than yam. On Guadalcanal (except the mid-north coast) the main yam gardens are planted first and only then people turn their attention to planting 'pana' as it is considered less important.

TABLE 3 - MEAN RELATIVE HUMIDITY OVER THREE YEARS: HONIARA

Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
77.3	77.2	76.1	76.1	77.0	75.2	75.1	74.1	71.2	76.0	77.0	77.2

TABLE 4 - HOURS OF SUNSHINE OVER TWO YEARS: HONIARA

Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
6.2	5.5	6.5	6.3	7.2	6.9	6.9	6.5	7.8	6.9	6.0	5.8

Source: Meteorological Bureau, Honiara, and Department of Agriculture, British Solomon Islands Protectorate.

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[1] Daylight hours on the Guadalcanal Plains are 12 hrs. 42 mins. in January, and 11 hrs. 33 mins. in July.

[2] Dala Experimental Station Annual Report, 1970.

TABLE 5

TEMPERATURES: HONIARA

Month	Maximum	Minimum
January	87.2	73.5
February	86.9	73.3
March	86.6	73.4
April	86.7	73.2
May	87.3	73.1
June	86.7	72.9
July	85.7	71.8
August	86.4	71.8
September	87.3	72.2
October	87.1	72.6
November	87.1	72.5
December	86.7	73.4

TABLE 6

MAXIMUM AND MINIMUM RAINFALL INTENSITY AND TEMPERATURES OVER TEN YEARS: HONIARA

Highest Daily rainfall recorded	6.19" April 1958
Highest Monthly rainfall recorded	25.69" April 1958
Highest Temperature recorded	93°F February 1957
Lowest Temperature recorded	66.9°F August 1960
Lowest Monthly rainfall	0.26" August 1954

Source: Meteorological Bureau, Honiara, and Department of Agriculture, British Solomon Islands Protectorate.

IV SOILS AND SELECTING A SITE

Geologically the island is complicated and diverse: sedimentary rocks form much of the hill areas, while basic and metamorphic rocks are the common rocks of the more mountainous areas, though even here, there are sedimentaries to be found. In the north-west there are more recent lava flows while volcanic ash has probably been added to much of the sedimentary material. However, the high annual temperature and heavy rainfall of the island generally ensure that chemical weathering is effective throughout the year, producing severe leaching of soil minerals and rapid rock weathering. As a result, there is very little difference in soils found in similar topographical situations, though the parent material may be quite different.

A study of the yam-growing areas on Guadalcanal reveals that yams are grown over a wide range of the land systems described by Hansell and Wall[1], on soils having the common characteristics of being moderately deep, well-drained and friable. In many areas the "best" yam soils are friable brown loams on the steeper hill-sides, such as those found on the south coast. Here the soils are being continually renewed by the movement of new material down the steep slopes. On other parts of the south coast excellent yams grow on gentle slopes in rather shallow brown loams overlying gritty clay loams. River terraces with sandy loams and sandy clays as well as most colluvial foothills provide good yam-growing soils. Half the gardens in the Marau area are in rather heavy red clays and coral grits, but it was noticed that the yams were small. On the west coast, a red clay soil was distinguised by a gardener as only suitable for 'pana'.

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[1] J.R.F. Hansell and J.R.D. Wall, Preliminary Report on the Land Systems of Guadalcanal, 1970 (unpublished).

The two most important soil factors are friability and good drainage, which are generally found only on newly-cleared land. All yam gardens are therefore newly cleared before planting. An exception occurs in the second-crop gardens tended in Tasimboko (Chap. XVIII).

Yams have been such an important crop for so long that most yam gardens now are found in areas which tradition has set aside as yam garden sites. A five-year fallow is usual, but where the soil is thin or land is plentiful it can extend to twenty or thirty years. One new area for yam growth is the Metapona land system area where, with tractors, one group is growing D. alata on grasslands. Grasslands are usually said to be the correct place for D. esculenta and D. pentaphylla: the former is supposed to be too fibrous if grown on newly-cleared forest land.

However, the actual number of years which have elapsed since an area was last planted to yams is unimportant. It is the existing vegetation cover which determines whether the soil is again ready for yams. There are a number of tree types which immediately indicate to the gardener the presence of good yam soils. In an older forest area these are Vitex cofassus ('vasa') and Pometia pinnata ('tau'), which according to Whitmore[1] are found in well-drained and dry land lowland forest respectively. Other species are Ficus spp. ('tambulolo'), Pterocarpus indicus ('lengi'), Bischofia javanica ('oa'), Macaranga spp. ('venua'), Ficus variegata ('laumoli'), Gmelina moluccana ('buti'), Hibiscus tiliaceus ('vaholo'). The last three are found in disturbed lowland forest and usually indicate former garden areas. Some trees of economic value may have been left in the area selected: Canarium spp. ('chela'), Artocarpus spp. (breadfruit), and Areca spp. (betel nut).

Once the area containing these tree types is found, height and density of the trees and ferns are considered. When the ferns have reached maximum size and show a tendency to die back, the soil is ready. If the vegetation has reached a stage where visibility at eye level has increased - indicating good development of larger trees - the area may be cleared again.

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[1] T.C. Whitmore, Guide to the Forests of the British Solomon Islands, 1966, pp.97, 117.

The gardener tests friability and drainage by pulling a small tree from the ground. If it comes up freely without the main roots breaking, the soil is suitable for yams. If it breaks, the soil can be used for taro. If mud or water adheres to the roots the ground is not sufficiently well-drained for yams. A handful of earth may be squeezed: if it breaks up when released, it is suitable for yams; if not, it is too clayey.

Nowadays it is lamented that no one is able to select suitable yam soils by smell as it is claimed some men could do in the past. If it is necessary to select new areas for a yam garden, this is usually done by the 'taovia'[1], or some older man noted for his acumen in gardening.

Yams do not appear to grow well in the mountains above approximately 500 m. - "too cold" is the reason advanced by the local gardener. Nor, of course, do the old beach terraces of coral detritus suit yams.

The best aspect is considered to be the east-facing slopes of a hill.

V LAND TENURE AND SOCIAL ORGANISATION

The population of Guadalcanal, excluding the township of Honiara, is 24,000.[2] Of this, 1,400 live in the mountain ranges, 3,500 on the hills and ridges and the balance of 19,000 around the coastal fringe, including the south coast where the population is 7,943[3]. Population density is highest on the southern coastal fringe where yams are still looked upon as a most important food.

People live in some 400 scattered settlements or villages, with rarely more than 200 persons and generally less than 25 per settlement. Each village generally contains representatives of each main clan. The people practise shifting cultivation through the secondary forest areas ('moru' south coast, 'karuba' north coast) where each clan has primary rights of usage.

Basically, the Guadalcanal people live by subsistence agriculture, but nowadays an increasing amount of time is devoted to cash crops; this is particularly true on the north coast where Honiara provides a market.

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[1] See Page 11

[2] Report on the Census of the Population of the British Solomon Islands Protectorate, 1970, p.120.

[3] M. Chapman, Preliminary Results, Census. Weather Coast of Guadalcanal, 1972, (unpublished).

Though there are three main exogamous clans on Guadalcanal, the main pattern of social organisation revolves around the extended family. This is not meant to underplay the importance given to the clan system. These clans are:

(a) 'Garavu' - so called on the south coast; between Inakona and Honiara it is called 'Laquili'; further east on the north coast it is called 'Manukama'. It is named after the large Sandford's eagle.

(b) 'Manukiki' - so called on the south coast, between Marau and Koleula; elsewhere it is called 'Kakau'. It is named after a small fierce hawk.

(c) 'Gaobata' ('Habuata') - so called along the length of the north coast and part of the south coast; elsewhere called 'Koinahao'. It is said to have originated near Koli but not to represent any creature.

(d) There are several smaller clans: 'Lathi', 'Bauro'.

Land is held by the clans and is inherited matrilineally but depending on whether the husband joined the wife in her village, or she lives in his village, not everyone has primary rights to land in their place of residence. However, this does not present a problem where land for subsistence food crops is concerned. Lasaqa[1] says all people in a village can obtain usage rights, which are granted in the name of social solidarity. Melanesian social structure is based on reciprocal rights and obligations. However, this ability to obtain garden land almost anywhere a man chooses to live is becoming less common where the planting of permanent tree crops such as coconuts or cocoa is being undertaken, or where attempts to transfer all land rights to outsiders are disputed by some owners of primary rights, or where land registration is attempted. Generally clans, though considered to know the extent of their land ownership, are far too large to exercise more than an overlordship. A smaller unit tracing descent from the first woman resident on a particular area of land is possibly the effective holder of primary rights. But the significance of these difficulties and their relation to yam culture of Guadalcanal lies in the pattern of planting.

Nowadays many yam gardens are planted to sweet potato and then to coconuts after harvesting. This effectively removes a potentially suitable area for yam cultivation and at the same time stakes on it an individual's claim to permanent ownership. As a result, men who have the control of primary rights on land do not give permission so willingly for strangers (people without primary rights) to plant yam gardens as they did before.

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[1] Lasaqa, Melanesians' Choice, 1972, pp. 99, 128.

What, then, are the controls in this system? Who decides when, where and how yams are to be planted? Leadership in Guadalcanal has rested, not with a hereditary chief, but with the strongest character, who is usually the wealthiest man in the community. This leader, called 'taovia' in times past, made such important decisions as to when to wage war, when to hold feasts, when to plant and harvest the yams. He would often confer with 'taovia' of other clans in his area, and he would be guided largely by precedent. Generally, therefore, it appears that his decisions were followed because they represented the majority.

As part of the structure of leadership there were also generally a 'garenatataru' - "man who chants the spells" and a 'garetabu' - "holy man" (Birao language), particularly in the interior and on the south coast. In theory, the former always cleared the yam ground of harmful influences and performed spells at each stage of the yams' growth, while the latter's duties were to advise the 'taovia' when times were propitious for certain decisions to be made; to make sacrifices to the spirits and to offer the first fruits of the harvest (Chap. XXI). Society on Guadalcanal was always very fluid and the functions of these men and the 'taovia' would sometimes be combined in the one man. A man could inherit his father's knowledge as 'garenatataru' or 'garetabu' but if the results of his rituals did not come up to expectations, another man might well usurp his position if he could show success in his intercession with the spirits.

The whole operation of yam cultivation was very much part of the social system and operated to a much tighter timetable, it appears, than today.

The position nowadays is very different, with great dispersal of power. Traditional leaders still exist, but there are also administrative leaders connected with the machinery of central and local government, and Christian Church leaders who are often men of considerable influence and authority, and who are generally very strict in their stand against heathen customs. Younger educated persons generally tend to be a disruptive influence on traditional patterns of village society, and the older leaders are not in a position now to monopolise wealth and build prestige by feast-giving. However, some do wield power by denying the use of clan ground to young people who want to use it for cash crops and individual farms.

There are places today in which, as far as yams are concerned, the old combines with the new. Both in the interior and on the southern coast (Parina, Tambili, Makaruka, Isuna) the 'taovia' tells the people when yam planting may commence and the Christian leader may bless the ground before preparations. People then generally clear and plant on days to suit themselves. Throughout Guadalcanal "festivals of first fruits", in which the first yams are offered to the Church in thanksgiving, are regularly performed.

A few pagan people do remain: they proclaim that they will continue to follow the old beliefs and rituals until they die. Others have a lingering regard for the ways of their fathers and quietly perform pagan rituals to ensure a good yam crop. Naturally it is difficult to get much information on these performances as difficulties would arise with the Christian leaders if their practice became common knowledge.

One group of people with an organisation closely tied to historical values is the Moro Movement[1] which is based at Makaruka. This movement has reaffirmed its identification with the supposed history and customs of Guadalcanal, while trying to gain the economic benefits of western civilisation independently of Europeans. The leader of the movement is Maka Moro whose father held hereditary ritual power which enabled him to calm stormy seas, stop torrential rain and promote the fertility of yams[2]. At Makaruka today large yam gardens are planted by the followers of Moro under the direction of two men who perform the rituals[3]. These men hold their position in succession to Mumunihande who was appointed by Tuimauri, the legendary Creator of Guadalcanal[4]. Moro can assist these men if anything goes wrong or if the previous crop was not up to expectations.

VI THE WORK GROUP

"All garden work is done in company. The Melanesian man does not at all care to work alone"[5]. As a result, much of the yam cultivation on Guadalcanal is done within one or more different types of work groups.

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[1] W. Davenport and G. Coker, Moro Custom Movement, 1967, pp.140-157.

[2] ibid, p.140.

[3] See Appendix 5.

[4] Moro, Ngelebalona, Chachia (interpreter), personal communication.

[5] W.G. Ivens, The Melanesians at the south-east Solomons., 1927, p.10.

The size and form of these groups vary with the size and form of the garden. A large village garden may be organised for an important village ceremony such as a wedding, or the opening of a school; or for hospitality, as at Makaruka, where there is a continual flow of visitors to accommodate within the Moro Movement[1]. A large garden may be made for money by a group such as the Gaobata Development Society[2] The work group will consist of the whole village organised by a leader who may be the local Church leader or the traditional 'taovia'. The group will work together to clear, plant, weed, cut down or stake and to harvest a garden. Men, women and children will be involved with tasks allotted according to their skill and age.

Sometimes a garden is organised for the whole community by the leader, but certain cultivation work is done by smaller groups. The felling, clearing and planting are done in groups and the leader then allots sections of the garden to individual householders, who care for their respective sections until harvest. The garden will be harvested after the leader has performed the "first fruits" ceremony (Chap. XVII). This type of garden can also be used to raise money: in this case only the clearing and laying out of the garden will be done communally; the divisions will be sold separately to individuals to raise a sum of money for a village project like a new church, for example. Reciprocal village groups will travel some distance regardless of relationship to help prepare the yearly yam gardens.

The common work group, however, is the family or extended family including the man, wife, children, parents of one side, blood brothers or sisters and in-laws. It is a flexible group, and its composition depends upon whether brothers and sisters are married, and what parents are present. Sometimes others to whom the family may wish to show friendship are included. Sometimes single men no longer living with their families may offer help in exchange for food. This family garden is often referred to nowadays as a "contract" garden, although this seems a misnomer.

The smallest working unit is the wife who plants the heads of yams she has used in cooking. She plants these in what is called locally her "kitchen garden" whenever she has time and planting material. Naturally such a garden is often small and fairly close to the house, and can be harvested when she chooses.

Some men today absent from their area, employed in business or engaged in Church or Government affairs, arrange to pay someone to cultivate a yam garden for them for a certain price - $A20 has been quoted. Such gardens do not have any vertical divisions, the worker is not fed and he does the work at any time suitable to himself.

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[1] W. Davenport and G. Coker, The Moro Movement, 1967.

[2] I. Lasaqa, Melanesians' Choice, 1972, p.241.

In the larger work groups the conclusion of each operation may be accompanied by a feast given by the organiser or owner. The lavishness or otherwise of the feast will depend upon the wealth of the giver. In many cases, it is only the provision of a good meal at the end of a day's work. The giving of this feast or meal does not remove the giver's obligation for the giver to help other people prepare their own gardens later.

The working of a group is well organised. Once the clearing has been done and a day decided for planting, people are organised to accomplish the digging and planting as quickly as possible. If possible, people try to complete this in one day. Usually the men start digging the holes while the women prepare the setts. A third group stays in the village to prepare food. The owner of the garden or leader of the enterprise is usually in this group as it is important to see that arrangements for providing the meal are adequate. A pig may be killed, fish caught and/or "puddings" prepared. However, in smaller or poorer groups a "soup" made of the yam centres, cabbage and coconuts will be used to feed the workers. Similar arrangements apply to communal harvesting (Chap. XVII).

It must also be added here that each sequential task may be associated with magic; information on this is presented in Chap. XXI.

VII PREPARATION

The word "year" can be rendered in a Melanesian language by "the yam crop"[1]. Solomon Island calendars are the flowering of certain trees, the growth of certain plants and the changes of wind direction - for example south-east trades ('ara') to north-west winds ('komburu'). The flowering of the tree 'rara' (Erythrina orientalis) which occurs between late May and early July signals the beginning of the yam season, when gardens must be prepared. September and October are the commonest months for actual planting throughout the island. The yams are harvested from Easter onwards, according to the time of planting.

Yam gardens may also be planted at other times, for example

(a) yams grown for commercial purposes. North coast cash farmers are planting at varying times and declare that there is no difference in the tubers[1];

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[1] W.G. Ivens, The Melanesians of the south-east Solomons, 1927, p.358.

(b) the weather will always affect the preparation of a garden. If the rains finish earlier than usual on the south coast, the gardens will be earlier. In some cases, gardens are planted as early as May by some individuals;

(c) to ensure an adequate year-round supply of yams, a man may make three yam gardens a year: an early one in June, another in September, and one as late as December or January (the latter is unusual).

The preparation of the gardens may take from two weeks to two months. This depends on the weather, the individual gardener, the size of the garden and what other activities may be going on at the same time involving both the individual and the village.

There are five methods of yam cultivation on Guadalcanal and generally each is confined to certain areas of the island (see Map 2). These methods are basically differences of preparing the garden and arranging for the support of the vines. They include

(a) underbrushing and stacking;

(b) underbrushing and clearing;

(c) clearing and burning of small trees and vegetation;

(d) clearing, cutting of all trees and burning;

(e) clearing, burning and use of stakes.

(a) Underbrushing and stacking is used over most of the island for yams and, in places, taro. Within the Solomons[2], this method appears to be peculiar to Guadalcanal. Once an area has been selected the workers move systematically through the area cutting down all the shrubs, ferns (such as Selaginella leveriana), gingers, heliconias and other small plants, stacking the debris in parallel lines across the slope. The lines of debris may be as close together as one metre or as far apart as two metres. The size of the heaped vegetative matter depends on the thickness of the original cover as well as the distance between the lines, but when first stacked they can be 0.5 m high and 0.5 m. wide. On slopes, where this technique is usually used, these lines of debris, sometimes retained by stakes on very steep slopes, act as erosion control and where stones are added in clearing the ground, simple forms of terraces are made.

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[1] Samuel Saki, personal communication.

[2] Papua New Guinea Newsletter Vol.6, no.25, 1972.

These debris lines are called 'biru biru' in the south-east, and 'lusu' in the interior.

In a well developed forest the middle and upper storey trees are left standing. In old secondary growth enough of the smaller trees are left with the few larger ones to ensure that most of the area is in shade. No attempt is made to dig up any of the tree roots and no fires are lit.

It is noteworthy that this method is used in the area of heaviest rainfall (south coast and interior).

(b) Underbrushing and clearing is a variation of the first method and is used in the east at Longgu and in the west at Wanderer Bay. The slashed vegetation is removed from the garden area and stacked around the boundary. This involves more work. The garden is called 'umu tatala' in Longgu.

(c) Clearing and burning of small trees and vegetation is the traditional method on the western side of the island, where this type of garden is called 'uta chavi charo'. The undergrowth is slashed and heaped up round the base of the large trees, while the middle-sized trees are cut down and similarly stacked for burning. The debris is fired, after which the remaining material is swept up, and depending on weather conditions, fired again. The end result is a garden clear on the ground but containing big trees, some alive and some dead. The difference (which is probably determined by rainfall) between this method and method (b) above is that West Guadalcanal people burn the garden area. A greater degree of clearing and burning occurs in the east (Longgu) so fewer trees remain. This kind of garden is called 'umu erieri'.

The few remaining large trees are lopped or cut at a later stage (Chap. XVI).

(d) Clearing, cutting of all trees and burning is the method adopted in North Guadalcanal from Matanikao to Aola and into the foothills at Paripao. The underbrush is slashed and two or three weeks later, the large trees on the bottom boundary are cut to fall into the bush. After another week or two the remaining trees are cut. The resulting tangle of debris is left for two weeks or so and then the whole area is fired. Should the first firing be unsuccessful then a second firing is made. It should be noted that this method is used in an area where rainfall over the two months preceding the clearing can be as low as eight inches.

Following the successful burning the boundaries are cleared to a width of two metres and logs are pulled into position to mark them; locally the method is known as 'vietali'.

(e) Clearing, burning and use of stakes, the customary way on Savo, Malaita and Santa Ysabel, is used on north-west Guadalcanal (where it is called 'babaghi' and in Marau. The bush is cleared systematically and burnt. If the area has been old forest, the roots and trunks of all the larger trees will remain but nothing will remain uncut, stones will be removed, and the ground will present a clean appearance.

After the yam vines have started growing, stakes are cut, carried into the garden and erected.

A similar method is used for growing 'pana' on the south coast, rather than method (a) above, but the growers explain that 'pana' does not belong to that part of the island and is a "recent" introduction.

There is no data available to prove which is the superior method of cultivation within an area, as in Longgu or West Guadalcanal which use different ways of preparation. Rainfall at the time is one factor in deciding whether to burn or otherwise.

People at the western end of the island, within road contact of Honiara, now say that they prefer to make the cleared and staked garden rather than the traditional one (method (c)) as they expect to plant sweet potatoes, and later coconuts, on their current yam ground.

VIII SIZE AND DIVISIONS

Gardens vary greatly in size depending on a number of factors such as who is making it - a village, a family, or several families; the size of the area available to clear; the number of seed yams waiting to be planted; and the purpose of the garden i.e. whether it is for a feast, sale, to feed the whole village or a family, or to supplement other crops. Availability of seed does, however, appear to be the most important factor determining size.

There is therefore no set pattern of garden size in Guadalcanal. Those seen ranged from 200 metres x 200 metres to 10 metres x 10 metres, with an average size of about 50 metres x 50 metres. However, size and shape are dependent upon topography, and as this changes often so do the garden layout and size.

Gardens are divided to enable work to proceed to a system, to judge their productivity, to allot ownership and to improve their appearance.

Every garden is considered to have a top and a bottom; this is self-explanatory where there is a slope, but such terms are also used where the topography is flat, and the garden is laid out from these two datum points.

The first markings are the boundaries. These are usually laid out before the initial clearing, but they tend to become obscured during clearing and it becomes necessary to re-define them by pushing some of the unburnt logs into position. In some cases owners may build a fence of sufficient standard to keep out pigs, but this is unusual.

If method (a) (see above) is being used, one lot of markings across the garden already exists with the lines of debris (Diagram A). If the gardens made after methods (b), (c) and (d) are very long, horizontal sticks, - in some cases termed 'lave' - can be placed (Diagram C). Horizontal sticks will also be used to mark off a small section of yams within a large mixed garden. In Marau (method (e)) where the gardening practices of the people originated in Malaita, horizontal sticks - locally 'firu' - are placed more frequently, every 2m or so (Diagram E).

The vertical divisions are formed of small poles, or lengths of rattan, bamboo or giant ginger stalk, laid end to end from the top to the bottom of the garden. Each line of poles or cane is laid in parallel lines; these are a similar distance apart but the distance varies from garden to garden as the owner decides, or the topography dictates, and ranges from two to six metres. In method (d) (see above) of Tasimboko and Aola, these vertical divisions may be made before the garden is burnt; the material used for the division is the giant ginger stalk, which is not destroyed by fire. If the divisions are made after the burning, rattan is often used.

These lines are called 'voro voro' on the south coast, 'piangu' in Chimiu, 'haivolo' in Malango, 'singale' in West Guadalcanal and Longgu, and 'kobe' in Tasimboko and Aola. The sticks which mark these divisions are always placed with the base or thicker part towards the top of the garden. Sometimes this may be towards the rising sun, or to the head of the river, to have "power". The reason is unknown although some people said that it "to please the devil before" (e.g. the spirit of the garden) or that, if the sticks are not laid properly in the same direction "the spirits will spoil the garden". Another explanation could be an aesthetic one[1]. Solomon Islanders take great pride in their gardens, and it has been explained that the sections make the garden "look nice" or "as a carpenter likes to finish off his work, so the gardener likes to see a neat garden". People at the western end of Guadalcanal said that in the past they were meticulous in dividing their gardens, and that an average section in a cleared garden was 2m square. They admit they are not so concerned today, and that is why they no longer lay out horizontal divisions. Some Savo Islanders were particularly proud of their 1m square sections.

In some places the divisions will be of a uniform spacing from each side of the garden but one or two divisions in the centre will be wider to allow for the planting of whole yams by older and more experienced people. The reason for doing this is to ensure that by using a whole yam, planted by an experienced person, there will be no chance of the garden failing and yam stocks being lost. These sections, locally known as 'mali' in West Guadalcanal and 'talanianoai' in Longgu may sometimes be at right angles to the other sections (See Diagrams I and J).

After the yam planting, perhaps one or two weeks later, or at the time of the first weeding, a number of other food plants are placed along the lines. These can include bananas, "cabbages", (Hibiscus manihot, Polyscias spp., Psuederanthemum spp.) sugar cane, pawpaw. Some owners may also use Coleus but this more often marks the change in yam variety planted, or is for protection (see Chap. XXI). These food plants then show the divisions when yam vines have overgrown the marking sticks.

In Longgu, if a large garden is involved, a group of approximately ten sections will be known as a 'monga', with a path, locally 'tala' running between two 'monga', one of which may have its sections at right angles to the other (Diagrams G and H). Also, a good four metres is always cleared round the garden in this area; it is known as 'ale ale' and is later planted with fruit trees.

A 'pana' garden in the grass plains of Tasimboko is laid out quite differently. First the tufts of grass are removed and left to dry on top of the ground for perhaps one week, depending on the weather. Then the grass is burnt. After two or three days, the area is swept clean. When planting 'pana' in this area, the gardeners take a length of rope knotted at 60 cm intervals. This rope is stretched along the length of the garden and the knots mark where each hole is to be dug. These lines are called 'zangi' and along them up to 100 'pana' are planted. About five of these lines represent one 'mamanga' or division of ownership. To make the work easier, lines at right angles are then marked, making squares called 'veavea'. The corners of the squares are marked by planting bananas, beans, tapioca or pawpaw (but not the usual Hibiscus manihot which does not do well in grasslands).

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[1] cf. B.Malinowski, Argonauts of the Western Pacific, 1961, pp. 59, 60.

As already noted the sections serve as units of measurement for work in planting, weeding and harvesting. They are important in assessing the productivity of a garden, as Guadalcanal people do not count individual yams except for feasts.

After the garden has been laid out, the owner allots sections to his family, and perhaps to some of his helpers. Relatives or friends will explain their needs according to how many yams they have ready for planting, and will be allotted sections accordingly.

In old times the allotment was nominal only, the land chief continuing to decide when or if the yams should be eventually eaten domestically, held for a feast, traded or kept for replanting. Nowadays people normally plant and harvest their sections independently of one another in the same garden area unless the garden was planted to help some major community effort (see Chap. VI).

If a group has underestimated its food requirements, it may buy sections from another area.

After a parent has announced that a section is for his small child, the tubers in it, and what grows from them can be held for that child regardless of time, or the death of the parents. As the tubers are harvested from that section, they are kept in a separate heap as belonging to so and so . The setts cut from this heap are planted in another area the following year; the harvest is still remembered as the child's, and the yams will be stored and replanted until he wishes to claim them. A small girl will be given her section; she will accompany her mother to the garden and learn to plant it; after harvest, she will take the tubers to her allotted sections in next year's garden and so on. When she marries, the product will remain hers.

IX THE DIGGING STICK

Though bush knives - 38 cm to 46 cm steel bladed knives - and three-quarter size axes are used for clearing the gardens, no steel is used to dig the planting holes except in the most sophisticated areas around Honiara. The digging stick is still considered to be the most efficient tool for this purpose. The stick is approximately 2 metres in length and about 20 cm in diameter. It is sharpened to a chisel edge with one side left rounded. It is used with the flat side down and the rounded side of the working edge upwards.

Great importance was attached in the past to the type of digging stick used and Ivens gives a description of the preparation of the digging stick on Ulawa[1]. In Paripao, the tree 'sasavea' (unidentified) is used and old men say today after a poor harvest that the wrong tree must have been used to make the digging stick, 'itoho'. On the south coast the traditional garden leader will dig the first hole of a yam garden using his special stick made from the tree Alstonia spectabilis - locally 'haurandi'.

The stick must be strong and heavy and other trees used are Securinega flexuosa Muell.arg. ('mamufua'), Fagraea racemosa ('bobo') and mangrove ('one'). At Bubunuhu it was heard that poisonous trees (unidentified) - locally 'hilau' and 'tolo' - must never be used to make digging sticks.

Because Acalypha grandis sends out vigorous shoots from the base, and its timber is strong, it is often used as a digging stick, in the hope that the characteristics of the plant will be transferred to the yam.

X DIGGING THE HOLES

The digging stick is driven into the ground at a steep angle, and then levered down to break through the soil. It requires half a dozen or more thrusts to loosen the soil, which is roughly mounded in the process. An area of approximately 45 cm to 50 cm is dug to a depth of 24 cm and then heaped into a mound about 15 cm to 35 cm high. On hillsides a drain is placed on the top side. On the east coast mounds are not made, and the yam is planted below ground level. Lasaqa[2] relates the lack of tillage in Tasimboko to the high fertility of the soil which renders mounding unnecessary. Mounding is hard work and is usually done by the men while the women come behind to clean the mound of roots and stones.

The work is done in short bursts with a longer rest at midday. In large communal gardens there is much laughter and singing together to the rhythm of the downward thrust of the stick. This rhythmic singing to work, common in many other parts of the world, is called in Malango 'kasonea', meaning "sing to be happy". When a group of workers reaches the bottom of a section, they raise a loud shout to let those in the village know how work is progressing. When the whole garden has been dug, another louder and longer shout goes up to let the preparers of food know that the workers are returning to eat.

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[1] W.G. Ivens, The Melanesians of the south-east Solomons, 1927, p.359.

[2] I. Lasaqa, Melanesians' Choice, 1972, pp. 134, 135.

The digging takes place in a very definite pattern. Work begins at the top of the first vertical section and proceeds down the slope, and then goes up the slope to the top before turning to go down again. If the sections are wide, or there are plenty of people available, two or three men may work down within each section. Otherwise each man begins in alternate sections.

XI HOLE TYPES

It was found in Chimiu only, that people liked to make different types of holes for various varieties.

A shallow hole in a small mound is called 'ngoremiavari' and regarded as a general purpose hole for most yams. A bigger hole in a larger mound is called 'tanohau'. A steep and large mound for the full development of the variety known as 'uviporea'- a much favoured yam which grows with its head down into the earth-is known as 'ngoimiboli'.

Yam types are chosen for various situations, long varieties being planted on hill slopes where they are easier to extract, and smaller, rounder ones on flat land.

XII HOLE SPACING

The number of yam holes within a division of course depends on the size of the division, which varies enormously depending on the lie of the land and the wishes of the owner. The yams are usually planted about 0.75m to 1m apart. Sometimes the planting is quite haphazard, and if there are some setts left over, the planter goes back and digs more holes within a section.

Where method (a) is used for clearing, one or two lines of yams are planted between the lines of debris ('biru biru' or 'lusu').

In Longgu, traditionally two lines ('kapiruka') of yams were planted down each vertical division. Other spacings are one line ('zangi'), five or six lines ('larvae') and three or four lines ('singale'). The latter term is now used generally for the vertical section.

As already noted (Chap. VIII) 'pana' in Tasimboko is planted in one vertical line ('zangi').

XIII PREPARING THE SETTS

D.alata are planted in Guadalcanal from tubers or from setts cut from the tuber. D. esculenta ('pana') is not cut, but placed in the hole with its head upwards. Certain varieties are planted with the head down (Appendix 4).

By tradition, and in the majority of areas today, the setts are cut from the yam with a mother-of-pearl shell - generally the black-lip. The shell is called 'kove' and was usually traded from Marau, Gela or Ysabel. A traditional rate of exchange in the interior was four 'kove' to one forearm's length of red shell money.

A well-equipped housewife will usually possess two or three 'kove' used exclusively for cutting setts from yam, preparing taro, and scraping tubers in preparation for cooking. It is believed, particularly by older people, that to use a steel knife will result in disease or a stunting of size of the yam.

The actual cutting of the setts with the 'kove' is done by turning the inside of the shell to face outwards, with the thumb on the rounded side, and then pressing down into the yam and rocking the shell from side to side.

The size of the sett depends partly on the size of the yam and partly on the area where it is being cut. On the south coast large, thick setts are cut - a good 8cm thick and 12.5cm long. Elsewhere on the island, setts are much smaller - 7.7cm x 5cm x 2.6cm. A large yam may yield up to ten setts. On the south coast tubers less than 25cm. long will often be planted whole. Mention has been made (Chap. VIII) of the fact that when very big tubers, such as those necessary for a special feast, are required, older people plant whole yams in the middle of the garden. This is said to ensure that nothing will go wrong with the growth of those yams.

Setts are cut carefully from the head, sides and bottom of the yam. The sides are cut part way, then snapped away from the tuber. The head is cut off at an angle. In Chimiu the head sett can have part of the interior scratched out as this is considered to make it strike more quickly. The flesh from the head scratchings ('takitaki') together with the remains of the tubers, is cooked for the helpers.

Preparation of the setts is done by the women and old men, except formerly in Malango where it was said to be men's work too. A small shelter is often built at the garden site to hold the prepared setts and provide shade for the cutters. Sometimes they are cut in the storage house at the old garden site. At other times they are cut in the village kitchens.

In most areas people prefer to cut the setts one or two days, or even one week, beforehand, so they can dry out a little. If it is very wet indeed they can be stored in racks above the kitchen fire. A commentary on European influence was heard at Wanderer Bay: "Everything is speeded up nowadays, so we don't dry out the setts for a few days the way we used to". There was an exception seen - a man at Balo said setts could remain in the rain up to a week without harm - in fact it could help them to strike quickly.

One source of planting material is the heads which have been cut from yams eaten over the previous months. Where yams are plentiful it is often worthwhile planting small gardens of these without ceremony as they accumulate. Otherwise they are held over in the kitchen and planted in the main garden of the season.

Coursey[1] points out that yields vary considerably with the size of the setts - yields from head setts can be 10 percent to 15 percent higher than from other parts of the yam.

When the setts have been cut and planting is ready to start, the setts are carried in fibre or coconut leaf baskets by the women to the planting area. Other women take the remains of the tubers to be cooked for the return of the planters. Cooking is done in bamboos, in earth ovens or in saucepans.

XIV PLANTING

The stage has now been reached for actual planting. Work may start at the top or bottom of the garden but the main criterion is to be systematic. The setts are carried to each division ('voro voro', 'kobe', 'singale'). It is at this stage that the traditional rituals may be carried out to ensure the fertility of the setts (See Chap. XXI).

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[1] D.G. Coursey, Yams, 1967, pp. 77, 78.

After the ceremony, the women take the baskets of setts and begin the planting, which is done in two stages. The first is to place the sett on the mound; the second is to return and plant it. The setts cut from the side of the yam are slid into the loose soil some 5cm or 8 cm from the top of the mound, with the outside surface downwards and cut or inside surface exposed. The soil is scooped lightly over part of the sett so that the sun can warm and dry it. The head sett is pushed into the mound with the extreme end of the head just protruding.

The general practice is to avoid covering the cut or inside surface of the sett unless it is dried to some extent. So it was found that if the weather was fine, the setts were planted immediately; if wet, they were left on top of the mound for a day or two to dry out a little. The Malango people of the high interior, which has a heavy rainfall, leave the setts on top of the mounds for a week before planting. On the other hand, the Tasimboko people of the drier north coast are always anxious to plant straight away for fear the sun will burn the sett.

On hillsides the sett is always planted on the uphill side of the mound. Otherwise it is customary to plant on the east side of the mound. It is also thought best to plant in the morning when the sun is still in the east. Setts of choice yams (such as 'doma' and 'takai', see App. 4) can be planted to one side of the garden or in a place where they can be expected to do well. If the gardener only has a few 'pana' these are also planted to one side of the garden.

If the sett does not strike within a few days, it is moved gently with a finger to "give it more air". If it still does not strike, another is planted, but it is considered very unusual if this has to be done.

If it is impossible to complete the planting on the chosen day, or there are not enough setts for the area, some setts are left on top of the last mound to mark the point reached. Sometimes the unfinished sections are marked by small sticks placed in the top of the mound.

Planting is generally regarded as happy work by the women and is easier than many of their tasks. All work at speed and in great good humour with much chaffing from the men - "sling 'im go", "make the basket light", "shake your arse". At Inakona as the setts are thrown on each mound the women shout "Hamu ghoa" "Hamu ghoa", (Yam) "for you" to make the work go more quickly.

XV WEEDING

The work of weeding is the only form of cultivation given the crop after planting and even weeding is sometimes not done. In clearing methods (a) and (b), the yams are generally weeded just before the remaining trees are cut down. From then on the vines tend to choke out much of the weed growth, and only when harvesting commences is the garden cleared. Where clearing methods (d) and (e) have been used, weeding may be done three times - just before staking, after three or four months and then just before harvesting, but nowadays this frequency is often reduced to a weeding just before staking.

Women do the weeding in easy stages over one or two months. The divisions laid down in the garden help them to cover the work easily, quickly and systematically. The weeding is organised by the wife of the owner, who may ask her friends to help. Old women and widows are often included in the work-force as the work is not regarded as difficult, and it is an easy way for such helpers to earn a little rice or tobacco.

As the weeds are pulled out, they are thrown against the horizontal divisions ('biru biru' or 'lusu') formed from the debris of the original clearing, or against the stumps of the big trees, or just left on the top where they are pulled. In a 'pana' garden in Tasimboko, the weeds are taken right outside the garden. On very steep slopes it is sometimes necessary to rake more soil and leaves over the tubers.

In Longgu and Tasimboko, the fruit gardens ('ale ale') surrounding the yam garden area are weeded just before the harvest weeding of the yams.

In some cases at the time of first weeding, more bananas, cabbage, sugar cane, pawpaws may be planted along the division.

The second crops of yams which are cultivated in West Guadalcanal, Longgu, and Tasimboko (see Chap. XVIII) are also weeded before the preparation to provide the support.

In former times the completion of thirty to sixty vertical divisions could again be the occasion of a feast for everyone (Canarium nut pudding being prepared).

After the weeding, it was forbidden and often still is, to enter a yam garden, or to touch any yam vine.

Weeding is largely neglected nowadays with little apparent deleterious effect on the garden.

XVI SUPPORTING THE VINES

The setts shoot within a couple of weeks and they are then watched carefully for the next six or so weeks. When the vines are some 70 cm long and just able to remain upright, it is time to provide support. In some cases, the time between planting and providing support will vary from one to three months. This depends partly on what people consider to be the "right" time. Some provide the support just before leaves appear, others wait until the first leaf has formed, but most wait until all the setts shoot.

In clearing methods (a) and (b) (see Chap. VII) the trees that were left standing in the initial clearing are now cut down to fall over the growing yams. The work of felling begins at the bottom of the garden and the trees are cut to fall towards the bush at the bottom of the garden. Some of the biggest trees such as the banyan (Ficus spp.) are only lopped. Small trees are cut off at the base. The fallen debris provides a trellis for the vines.

Some trees such as Canarium ('chela') are not cut, because the leaves are very dense and would smother the young yam shoots; an unidentified tree - termed 'bale' in West Guadalcanal - which has a poisonous sap and whose timber rots quickly so being useless for vine supports - and economic trees such as breadfruit, betel nut, and the palm used for flooring, are also left uncut.

The reason for this method of supporting yams is explained in two ways:

(a) the big trees shake the ground when they crash and this makes the yams grow well; and

(b) the debris covering the ground keeps the soil soft and damp and cool.

The second and more sophisticated reason may be a new explanation which has been a result of European agricultural teaching. However, it is a very logical reason. This type of support for the yams saves a lot of labour in cutting and placing stakes which is the method used elsewhere in the Solomons. It also prevents soil erosion on the steep slopes where rainfall is so heavy. It is acknowledged that there is less weeding work in this type of garden as the yams form a rooflike cover over much of the ground, thereby smothering the weeds.

The burnt gardens of Longgu and West Guadalcanal (clearing method (c)) are not staked, but limbs of any remaining trees are lopped, and extra material, pulled in from the surrounding bush, is used. Sometimes small fences are erected to prop up the dead branches.

In Tasimboko and Paripao (clearing method (d)) where the whole area has been burnt, the remains of the logs serve the vines as supports.

Where staking is done in a completely cleared garden (method (e)) - and this is often a 'pana' garden - the number of holes is counted and stakes are cut and placed accordingly. Sometimes three or four stakes are slanted and tied together at the top. If people are late in staking they will individually turn each vine on to the stake. In Malaita, the practice is to turn the vine on its own stake daily, to prevent wandering. People on Guadalcanal say their forefathers may have been more careful, but they do not worry today.

A fence can be combined with staking for a row of vines bordering a road. If the garden is on a steep slope, the stakes are inserted at an angle to join the top of the upright fence. In south Malaita, a long horizontal pole supported at each end by uprights is used to support a dozen or so vines, - a practice sometimes seen also on the north coast of Guadalcanal.

Stakes are generally of bamboo or strong saplings. One unusual garden was seen at Lambi in which the yams were using the cornstalks left over from a former garden[1]. For a 'pana' garden on the grasslands Phragmites karka ('andi') is used for staking.

A second crop of yams from a garden is not generally staked as it is not considered worth the effort - they can climb up the small bushes of secondary growth. An exception is in the second gardens of Tasimboko (Chap. XVIII).

XVII HARVESTING

The yams usually take up to nine months to mature.

Harvesting can begin in March and continue through, depending on the area, and the number of gardens, until December. The yam is considered ready for harvesting when the leaves of the vine turn yellow and the stem of the vine blackens and begins to die back. In Chimiu people say the yam is ready when the herb Ageratum conyzoides ('mamuso') flowers.

Guadalcanal people normally harvest only what they require to eat from day to day. The housewife starts to clear away the tangle in the first vertical division, beginning from that section - taking perhaps three or four horizontal divisions ('biru biru', 'lusu' or 'firu') - until the length is empty except for some left for the people who helped plant the garden, or any women who may help harvest. A woman who fails to do this is criticized by the village. The next vertical section is then harvested and so on; the time taken of course depends on the size of the garden, although yams are not left in the ground for more than two months once they are ripe as they begin to get watery.

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[1] D.G. Coursey, Yams, 1967, p.84.

The actual digging out of the tubers is done with the aid of a stick. The same type of tree is chosen for the harvesting stick as for the digging stick. However, the harvesting stick is shorter as it is used in a squatting position. It is sharpened on one side. The digger squats beside a yam vine, and with his hands removes the soil from the top of the tuber. Then using the stick, he carefully removes the soil from either side of the yam. On steep slopes the yam can now be extracted. On flat ground the whole yam has to be dug around. The digging is a slow and tedious process to avoid breaking the skin which would prevent storage. It can take up to twenty minutes to remove one tuber.

The yams are cleaned and graded after they are dug. The very choicest and biggest are kept for a special occasion, the better ones for planting, and the smaller and damaged ones are put aside for eating. They are taken back to the kitchen, where they are kept in a cooler part and certainly not near the fire, where, it is said, the smell of cooking fish or meat will make the yams rotten; or left in a cool place in the garden until the store house is built. The yams of the gardens which are ready in the early part of the harvesting season, Easter till June, are usually all eaten. The yams extracted towards the end of the gardens' time are looked at more closely with the selection of planting material in mind. If a tuber has been exposed while ripening it is considered to be suitable only for seed yam.

In other parts of the Solomons, such as Malaita and Ulawa, a concerted effort is made to harvest the yams as quickly as possible. This is done on Guadalcanal today only when the garden is required for some particular purpose, although it is possible that the practice was formerly more general, as two men said they once used to take out all yams within a week. If the yams are to be harvested at once the men and women of the village divide up the tasks, some workers digging, others sitting aside to clean off the soil and hairy roots and to sort out the tubers into those destined for storage, for immediate eating and for seed.

Yam harvesting is always an occasion to celebrate the festival of the first fruits in which the Christian Church plays a large part today. Most householders nowadays take one or two newly dug yams from each division to the church and once they have been blessed, the gardens can be harvested. The day following the blessing is often one of feasting when one village will combine with another to cook large quantities of yams and kill some pigs[1].

An independent householder living away from a village may take out his first yam and ask his Christian leader to visit him and bless his crop; the blessing is followed by the eating of a yam soup with the leader.

XVIII SECOND GARDENS

It is quite common on the north coast to use the same ground for two crops of yams: this is done regularly in Tasimboko.

As each yam is harvested, it is inspected. If it is small, it is immediately replaced in the ground. If it has been attacked by the yam beetle (Papuana sp.) the affected part is cut off and the remainder replanted. At the place where each yam is harvested, a small stick is inserted. The next day the householder will return with a basket of setts to replant at these places. Thus, section by section, the garden is used again.

The garden is by no means clear by this time. Half burnt logs have sprouted and small scrub has sprung up since the garden was originally made. About one month after the replanting of the yams, when they have sprouted well, the scrub will be about 2m to 3m high. Then the women come to weed, and strip the bark off the small trees. After waiting three days till they begin to die, they return and bend the stripped trees over the garden. The yams can now grow up over the debris.

These second gardens are known as 'barau' in Tasimboko, 'poponga' in West Guadalcanal, and 'suka' in Longgu.

If a man is not ready to harvest his yams when ripe, or has not prepared a new garden but wishes to hold over his seed, he can just cut off the dead stalk of the yam at ground level and let the tuber regrow. This practice is known as 'oli' at Konggeva.

'Pana' gardens are also reused in the same way.

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[1] Appendices 7 and 8.

There is no first fruits ceremony attached to the harvesting of a second garden.

XIX STORAGE

Storage of yams is associated as much with providing shelter for planting material as with protecting a harvested crop. Thus on the south coast and interior, the storage house, no longer a work of art as they were in some parts of Melanesia, is often not built until June or July after half the crop has been eaten during the preceding two months. Storage houses may be built on the site of the recently-harvested garden, or near the site proposed for next season's garden.

The main purpose of these houses is the provision of shelter from the sun and free ventilation. They vary in size with the crop but generally average about 2m or 4m long by 2m wide; the roof is made of the ivory nut palm (Metroxylon salomonense). Most houses have floors ranging from strips of Areca sp. palm laid directly on the ground to small poles forming floors up to 1.5m above ground level. In some houses, a series of shelves made of saplings are erected. Some houses do not have floors but instead leaves of Pometia pinnata ('tau') are spread on the ground. 'Pana' is often stored on banana leaves.

Houses may be completely walled and have a leaf door, or may have walls only on two or three sides.

The yams are stored according to the vertical division ('voro voro', 'kobe' or 'singale') from which they were harvested. Sticks are used to indicate each division's harvest. Sometimes a walk-way is left between double sticks to allow access.

It is the duty of a father to tell his son about the different harvests from each area so that the information will not be lost. By storing according to the vertical division, the success of the crop can be judged and remembered adequately enough for their needs.

In arranging yams in the house, all are stored with their heads upwards, the elongated varieties placed in lines just touching and slanting at 45°. The stronger yams like 'bakae' (see Appendix 4) are underneath, and thinner skinned ones on top. The piles can be 1m high.

Except on the south coast, store houses are not often built today. The main reason is that the yam is no longer the main subsistence crop, and the gardens are no longer so big or numerous as before. The use of D.D.T. against malaria on the walls of all houses on Guadalcanal is said by the people to spoil the yams, so it is no longer worthwhile to build storage houses. People move more freely today and the dangers of theft in certain areas where strangers are more likely to appear, e.g. Honiara, has led to less storage of yams on the garden sites. In this case, the yams are taken back to the kitchen.

If a storage house is not built, the yams are just heaped up in the middle of the vertical sections on the ground with banana leaves or heaps of vines over the top: this is apparently sufficient to keep the skins fresh and provide protection from the sun. In Western Guadalcanal, these heaps are known as 'belu'.

After any very small crop today, the yams are often stored only according to size and variety: a heap of big yams for an approaching feast, smaller-sized ones for replanting, poor ones for eating, and another heap consisting of 'pana'.

An unusual storage method is seen on the south coast, where the top is lopped off the tree Hibiscus tiliaceus ('vaholo') to make it branch more thickly, and around the base of the tree, about 1m off the ground, a triangular platform is built. The yams are placed on this and covered with leaves of Pometia pinnata. Rain is not regarded as a problem in storing yams, but they must be protected from the sun.

Previously magic (see Chap. XXI) and "medicines" were used to preserve the yams, and the storage house was ceremoniously shut until the following season. All elderly people attest to the efficacy of past yam customs and say that because they are no longer used, disease is rife today. They deplore that even when yam "medicine" is used it seems powerless as not everyone else is using it. As a result the yams have to be checked - they are turned and drying earth brushed off them, and any diseased ones discarded.

When the yams begin to sprout, many people take this as an indication that the time has come to begin brushing the new gardens. It is recognised that it is not good to allow the sprout to grow too long. It is the business of the women to check the yams in the store houses and see that this is not happening, and to remove a quarter length of the sprout, if the garden is not ready. Valasi people say the sprout must not be broken off, but cut, or the yam will be spoilt. At Inakona, there is a special name for yams which have not developed properly because the man has been too late in planting and has broken off the shoot too many times beforehand. Only one man said the sprout should be cut off twice before planting. On Malaita[1], it is regarded as better to knock off the first sprout and plant on either the second or the third sprouting.

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[1] L. Maenia, Root Crops Interchange (unpublished, copy held by the British Solomon Islands Protectorate Department of Agriculture).

XX PESTS AND DISEASES

On the whole, yam pests and diseases are not serious on Guadalcanal. It has only been possible to get three yam pests identified.

The most serious pest is the yam beetle (*Papuana* sp.) It is described in its larva stage by most people as 'pepe' and is said to be more prevalent in the rainy season. The beetle itself is described as 'kalu' (Tasimboko), 'potchu' (Birao), 'voru' (Malango), 'geu' (Wanderer Bay) and 'korokoro' (Longgu). Although widespread, it is not considered serious. When the beetle is found at harvesting in Tasimboko, the damaged portion of the yam is cut off and the remaining piece replanted (Chap. XVIII). At Sukiki the people eat the undamaged part. Formerly in Malango, the treatment for the beetle was to use grated giant ginger root ('karokaro'). The tuber of plants thought to be affected was exposed, the affected part cut away and the grated ginger root applied to the cut surface, after which the soil was replaced. At Betilong, another preventive against "worm" is to put the white sap of *Alstonia scholaris* and *Cerbera manghas* into small holes dug at the top of each section. The "sourness" is supposed to kill the "worm". *Coleus* is planted over each hole. The ground so treated is immune for successive gardens. Gold Ridge people believe that the black leafed *Coleus* will stop the "worm".

Another disease is described as "the death of the leaf" - 'raumate' (Malango), 'rauratcha' (Wanderer Bay), 'raukavukavu' (Longgu), and 'raurevu' (Paripao); in the latter case the literal meaning is "leaf as burnt by fire". The vines are said to turn black as if struck by lightning just after they reach the stakes. The vine and leaves shrivel and later die. The tuber in plants less severely affected will develop but the yield will be poor. The causal organism is a fungus *Colletotrichum* spp.[1] At Lambi, a mixture of crushed leaves of *Elatostema* sp. and water is sprinkled over the vines and leaves when they show signs of being affected. At Gold Ridge one man said he took the vine 'alovavalesi' (unidentified) and tied up the blackened yam vine to effect a cure. Again the black leafed *Coleus* is claimed as effective against the sickness "borne on the wind". (For other "medicine" see Chap. XXI).

A mealy bug *Planococcus dioscorea* Williams (known as 'konghouhosi' in Aola, 'revo meta' in Longgu) also exists but is described as not being very serious. It will spread along the vine and leaf to the tuber in the garden, and from tuber to tuber in the storage house. It does not rot the skin, and can be washed off before the yam is used for replanting.

An ash-coloured fungus (known as 'revo taa' in Longgu) is described as more serious; it disintegrates the inside of the yam to powder. Much the same symptoms are described in the following: 'kindi' (Birao): the leaf dies, the yam skin dies and the tuber is black inside; 'matenivange' (Aola) - literally meaning "the death of the crop"; 'poocha' (Wanderer Bay), which describes the tuber rotten in the ground. In all these cases, the people said when it was nearly time to harvest, the skin and sometimes the tubers are black or dry inside and the vines also die. It has been suggested that these could be the final stages, or combinations of diseases already described.

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[1] Information from Dala Experimental station.

Another complaint occurs at Inakona in which the vines and leaves appear healthy, but no tuber develops. A Tetekanji man described something similar when he said that sometimes the tubers are unexpectedly very small. However, they can be replanted the following season and will be satisfactory.

As well as disease another pest is blamed for the decline of yam growing today, namely wild pigs. The people of Suta made their 1972 garden on the south coast at Kuma because of the depredations of wild pigs in their area. The people at the western end of Guadalcanal also complain of the increasing number of wild pigs spoiling their bush gardens. It would appear that previously most people lived in the interior and pigs were kept at a minimum by the constant hunting parties crossing and recrossing the bush. Today for economic and social (such as medical) reasons, many people have moved away from the interior. Of the villages still remaining, many are half empty for long periods while the men go to the coast on business, or to earn wages or to work communally at Makaruka (see Appendix 8). Fires are sometimes kept alight to keep away wild pigs but this is said to be largely ineffective.

Some people complain that the spraying of houses against malaria-carrying mosquitoes has spoilt their seed yams; they have moved their gardens further away so that the storage houses might remain undetected by sprayers.

XXI MAGIC

In former times each stage of the preparation, planting and growth of a yam garden was accompanied by magic spells together with certain rites. Hogbin[1] points out "a bundle of leaves or vegetable substance is also an essential ingredient of Guadalcanal magic. Those selected are defined by tradition, but they practically always have some very obvious connection with the object of the magic"[1]. The materials were known within families or clans.

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[1] I. Hogbin, in Oceania, vol. VI no.3, pp.254, 255.

Garden magic was used by the Melanesian because "he has to recognise that there is something which eludes his most careful calculations, his most conscientious preparation and efforts"[2] "Garden magic is thought to make just this difference which a man hopes for from 'chance' or 'good luck' when he sees everybody round him working as hard as he can and in all other respects under similar conditions to himself"[3]. What do the people wish to achieve which may be outside their human efforts?

Most common spells ask: that the setts will multiply; that the ground will be disease-free and produce healthy tubers; and that the garden will not be harmed by enemies, human or otherwise.

On Guadalcanal, forces (or the elusive power) believed to control these things are known as 'namana'; 'namana' could often be obtained through the intercession of the spirits, who might be supernatural beings such as the snake spirit, or ancestors who had been particularly successful in the past. Within a line one or two people could do this. The 'garenatataru' was the man who knew the correct words to chant, which included the names of forefathers who were successful gardeners, with each ritual. Everybody knew the substance used in the ritual, but only the 'garenatataru' knew the correct words. If such a man was not available the 'garetabu' the "holy man", who knew how to make sacrifices to the spirits, was called on.

If a village did not have its own 'garenatataru' it could approach a renowned one in the next village, and each villager would contribute red shell money to pay him.

This communal magic is probably not performed anywhere on Guadalcanal today, except at Makaruka by two men said to be geneologically related to the first mythical hero (See above p. 12).

Individual magic can be used on yam gardens. Solomon Islanders are a very individual people and previously lived mainly in isolated hamlets with their close family. "Almost every man of consideration knows how to approach some ghost or spirit, has some secret of occult practices"[1], and so it was that nearly every individual possessed some garden magic which was passed from father to son or mother to daughter. One man at Bambasu said he and his wife would combine as they worked in a garden and do what they considered would bring greatest success. If one man's garden was not fruitful he would call on another whose garden was fruitful to perform his special magic on next year's garden. If the two people were within the same clan, this could sometimes be done without payment, but otherwise some payment would be made (one price quoted was six strings of red shell money).

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[1] An attempt has been made to identify these wherever possible. C.E. Fox (The Threshold of the Pacific, 1924, pp. 245, 251, 253) has drawn attention to the fact that there are certain objects par excellence which are the vehicle of 'namana': they include lime, Cordyline, water and coconut water.

[2] B. Malinowski, Argonauts of the Western Pacific, 1922, p.396

[3] ibid, p.421.

Today on Guadalcanal, the people are undergoing a period of social change, and information was heard from individuals in varying states of belief. Some believed in the spirits of their forefathers, and continued to perform the spells and rituals. Some recounted that their fathers had done this but that they no longer performed any rituals themselves. Others automatically performed the ritual, because it had always been the practice, but without the spells because they no longer believed in the old spirits. These people, nominally Christians, regard the old practices as a type of insurance. They admit that they are not too sure whether these customs are as bad as some of the early missionaries depicted. The spells have often been forgotten anyway, being in an older language.

Although there is a pattern in spells and rituals which applies without too many variations throughout Guadalcanal, the differences are just as much individual as geographical, as magic was an individual or clan possession. The names of the villages where the following information was heard are given in brackets; the practices are usually individual and do not necessarily occur throughout any given area.

(a) Preparation of the site before clearing

When the time came for the yams to be planted, the 'taovia', 'garenatataru' or 'garetabu', if the garden was to be a communal one, or the head of the family if the garden was to be a small one, having addressed the ancestors previously, would quietly go to the intended area and walk about therein. Here, a ritual was followed which was said to ensure that no evil remained in the site and good yam growth would result. Four ways are described below.

Importance was often attached to the gardener's stone axe with which he was going to mark out the garden. A particular axe would be handed down from father to son. A spell would be whispered over it before the work began. An example was given at Nadoa:

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[1] R.H. Codrington, The Melanesians, 1891, p.192.

Toto alo maris kiki
(cut rope (2 kinds) small)

Toto alo maris lava
(cut rope (2 kinds) big)

Toto alu maris kiki
(cut red money small)

Toto alu maris lava
(cut red money large)

Toto onga maris kiki
(cut white money small)

Toto onga maris lava
(cut white money big)

Toto alo maris kiki
(cut (yam) rope small)

Toto alo maris lava
(cut (yam) rope big)

The gardener called to his forefathers and then cut some vines around the boundaries. Eight days later, the helpers would come to brush.

Some people pulled on certain vines - an *Asclepiadaceae* ('alobalo' at Makaruka), a *Moraceae* ('alomauri' at Valasi), and others unidentified ('aloluba' at Bambusu and 'alogulugulu' at Kuvamiti)- and then whispered more words before the tightly stretched vine was cut. One significance of the liana appears to lie in the fact that it has a long life. It is claimed that even when cut and laid in the sun these vines do not die, and their association with the selection of ground for yams ensures that the yams will do well and not die.

After marking the perimeter, the leader would return to the village. A lapse of one to two weeks would pass and then he would announce that the garden was ready to be brushed.

Another ritual is for the owner of the garden to tie a piece of tough vine, such as Ipomoea leari ('chighni') at Inakona, Ipomoea obscura ('kole') at Lambi; others unidentified 'aloterara' at Isuna and 'alogulugulu' at Parina - round his leg which, as he walks about the site without looking back, is said to draw out the snakes or centipedes which may harbour harmful influences against the garden. The rope is then thrown in a stream so that any evil taken out by it may be washed away.

Ginger (Zingiber officinale) ('ria'), which when eaten gives a warm feeling i.e. life, was sometimes chewed and expectorated on the site (as at Isuna, Wanderer Bay). Lime blown on the garden can be used "to chase away the devil". This form of purging is called 'bulu' at Totonga and the women must stay in their houses while it is done.

One man at Inakona said his father always burnt a piece of ginger on a fire at the garden site believing the smoke would then have power to drive away any evil influence. Another man at Pichahia burnt the bark of the tree 'rugho' (unidentified) and Ficus baccaureoides ('mamani') on a fire made of Premna corymbosa ('aroaro'). The former is a tree said to belong to an evil spirit which would spoil the garden unless chased out by the smoke while 'mamani' is a plant which will "sweeten" the garden. The fire is made on the top-forest side of the garden.

The forefathers could also be approached in another way as recounted at Sukiki: one owner would take along a prepared pudding 'lakemo' (made from grated yam mixed with boiled coconut cream and cooked on the hot stones) in half coconut shells to the tabu places of the forefathers and leave each with the words "food for you", calling on the names of the ancestors on the understanding that they would ensure a fruitful garden.

(b) Making the garden

Once the area had been brushed and the divisions laid down, more rituals could be carried out to drive out malign influences. With a branch of Cordyline terminalis ('chili') in each hand, a man may slowly walk up and down the garden waving the branches over the ground and uttering a spell. This is done at Makaruka today. An old man at Nadoa said his father whispered the following words over the branches first:

Vatu poepoe i chau
(stone called chau)

Sivo ka viru viru
(good inside ground come up)

Vatu poepoe i chau lalo
(stone called chau down)

Nalaga ka viru viru
(bad inside ground come up)

Afterwards the branches of the Cordyline would be planted on the boundary of the garden.

Another concern may be prevention of poisoning of the garden by a human enemy. Poisoning was attempted by scattering or burying a concoction of vegetable matter over which a spell had been breathed. A bamboo containing a mixture of black sand ('marasa tavola') and shaken over the garden was reputed to kill the yams and render the ground useless for yams for ever. No spell had ever been known to counteract this kind of poisoning.

Some antidotes to poisoning are to plant Cordyline which has had a spell "breathed" over it at the side of the garden, at the four corners. Another plant used on the boundaries to prevent evil bringing harm to the garden is Hemigraphis ('mataputi')[1].

Chimiu people called on the help of the snake spirit to frighten anyone who approached the garden. It might do this by lying across the path leading to the yam garden. This type of spell was called 'bara' and whispered over the tree Leea suaveolens ('loqu').

In Moli one precaution against poisoning is to take Stenochlaena sp. ('alorovarova') and cut it into four pieces, whispering a spell, then bury four pieces of flint ('achibulu') over which Coleus[2] is planted. The spell was to the effect that if anyone now attempted to poison the garden, the spirits would see that his leg became badly cut by the flint. Another man said the flint was expected to cut the neck of anyone who interfered:

Sui munga, sui kome
(finish mouth, finish place)

Bara munga, bara kome
(fence mouth, fence place) (This is incomplete).

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[1] The underside of the leaf is black and is said to make the eye of the evil spirit blind so that he cannot see the garden to harm it.

[2] Always the black-leafed variety. Any dark-leafed plant is attributed with magical powers, as it is associated with the blood of the snake in the first story at Appendix 1. For another explanation, see C.E. Fox, The Threshold of the Pacific, 1924, p.278.

At Lambi, one clan used to plant bundles of Evodia ('lombo') in the four corners to stop poisoning. When the garden was harvested, the Evodia was thrown away.

The eagle spirit was called on by one group at Inakona and asked, "If anyone poisons my garden, may his garden die". Another method at Inakona was to plant ginger ('ria') on the boundary saying, "If anyone comes to poison my garden then the 'ria' will go back with him and burn up his garden".

At Nadoa an anti-poisoning spell was given as follows: take three pieces of Coleus and break three small stones in the house. As the stone and Coleus are held the man calls the name of all the "custom men" (witch-doctors) who might harm the garden when they see the trees cut down. After calling the names he says, "May your tongue go out the back of your neck and the back of your head come out of your mouth and may wind and rain blow any bad spell out to sea".

Asana, Gare, Umbreto, volia
(name of man)

Kare maea go ka la sere
(swear to garden)

Ranga duka lapina
(pull your custom tongue)

Talua rorona
(out of back of head)

Rorona ka mae manganga
(back of head come out of mouth)

Maka harasea hara hara
(take away winds)

Kave langa nea na murina botala
(throw away far away cannot reach)

Another form of protection found in Tetekanji, is a spell whispered over the knife:

E alu baratabu i atanda
(8 times block from east)

E alu baratabu i tuituku
(8 times block by standing up)

E alu tuituku
(8 times stand up)

E alu saba tuku
( )

E alu baratabu i vava
(8 times block from west)

E alu tuituku
(8 times stand up to block)

E alu saba tuku
(8 times cut)

Tivuri kabo kabo sia
(Take out so no one can see)

E alu baratabu i tasi
(8 times block from the sea)

E alu baratabu i longa
(8 times block from the land side)

Then the owner of the garden climbs a big tree in the middle of the garden and cuts off the limbs to the east, west, sea side and land side, leaving only the top. The spirit is then asked to harm anyone who tries to spoil the garden - to take off the ridge cap of his house, so that the rain will pour in; to remove his clothing, and that of his wife, so that they will be cold and wet; to destroy his garden so that he will be hungry. Coleus is planted at the bottom of the tree.

Today in a good Christian community, of which there are many on Guadalcanal, the local priest or elder of the church may walk over the proposed garden area, saying prayers to clear it of evil spirits which may harm the yams.

(c) Preparation of the setts

The garden has been prepared and laid out and as the time approaches to cut the setts certain things are on the garden-owner's mind. Will there be enough setts to fill the prepared garden? Will they all be healthy? Will the garden be protected from sickness?

One way to overcome any of these things is to insert slithers of some strong, quick-growing shrub or tree into four of five yams and plant them at the four corners, and in the middle of the garden before the actual day of planting. Some of these trees or shrubs are: Leea suaveolens (Tasimboko), Alstonia spectabilis (West Guadalcanal), Coleus (Marau), Ophiorrhiza sp. ('gori' near Kolosulu), Boehmeria aff. platyphylla (Duidui), slithers of the purple-and white-skinned Barringtonia racemosa (Betilonga) and Elatostema at Bubunuhu.

The bark of the tree Endospermum medullosum ('haikambe') is used by some villagers at Bambasu to ensure growth of big yams, especially the 'uvi zavoa'. Another man from the same area said that he goes to the tree Bischofia javanica ('oa'), and with one hand on it asks "I want plenty.........(name of favoured yam)", and calls on the forefathers. After that he takes the bark and inserts the pieces into four yams and plants them in the corners. 'Kongapoora' (unidentified) is a tree whose wood is used to protect 'pana' in Tasimboko. In Valasi Leea suaveolens is used with one yam from each section piled along the top of the garden.

At the western end of the island Sterculia shillinglawii ('mamala') was put into nine yams, and three were planted respectively at the top, middle and the bottom of the garden, to ensure there would be enough setts for planting.

One man at Tenalinggi is said to hold magic stones which he buries in the corner of his yam garden today to bring a successful garden.

Another method is to sprinkle substances over each heap of setts as a magical formula is uttered. The setts may be in piles in each vertical section ('vorovoro', 'kobe', 'singale') or in one or two heaps either at the top or in the centre of the garden. These variations depend partly on location - the south coast Makaruka people favour a heap in each section, the west coast people, one or two heaps - but partly on the size of the garden. The heaps of setts are attended to by the leader, priest or owner of the garden who sits at each heap in turn, facing the bottom of the garden. The spell whispered over a substance is to ensure that all the setts strike and produce healthy yams.

At Nadoa, one man whispered his spell over a coconut, then broke it open allowing the water to run over the setts;

Oko kiki, Oko lava
small Oko, big Oko
(name of spirits who help gardening)

Revo kiki, Revo lava
small Revo, big Revo
(names of more spirits)

Chipuli Chombo
(name of his father who was a successful
gardener)
(Incomplete)

Another spell heard at Sauri, south coast, was recited over a coconut held above the heap of setts and called on the spirit's name eight times:

Miki, Tariana
(forefathers who were good gardeners)

Gola kanna poso
(yam yam)

Lakama poso katatavakekegha ghoro
(must spread must quickly)

Sugura vahia
(spread)

Magical preparations sprinkled over setts are used more often than most of the other customs described, but today many people use the "medicine" without the spell. Some of the substances used elsewhere are: bark of the Ficus sp. ('tambulolo') with coconut water at Makaruka; Alstonia scholaris[1] and water in Malango and Marau. A Tetekanji man stated that scrapings (bark and/or sap) of Alstonia scholaris[2] ('sobaha'), Ficus sp. ('tambulolo') and Acalypha sp. ('bete') mixed in a bamboo, can be poured over the setts. Lime is blown over setts at Valasi. Ginger is expectorated over setts at Inakona, Isuna and Lambi.

Bundles of vegetative matter can be placed under heaps of setts: bark scrapings of Ficus sp. ('tambulolo'), Canarium sp. ('chela') and 'bubutasi' (unidentified) are placed under bundles of setts to ensure fertility at Sukiki. In other areas sprigs of ginger are often used in the same way and then planted at the corners of the garden after the yam planting; this is said to secure a continuous supply of yams. One man near Kokona takes soil from four corners of his garden, scrapings of Pometia pinnata ('tau') and ginger, amongst others, and places the bundles under his heaps of setts, which he said gives him "control" over his garden. After the planting, he scatters the bundles over the garden: this will make the yams grow so well that people will look back as they pass and say, "That man has a very fine garden".

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[1] Taken from the east side of the tree at Marau.

[2] One of the reasons why the sap of Alstonia scholaris is regarded as potent is because the bole of the tree suggests the knobbed appearance of a yam, and the yams are desired to grow as big as the tree. The sap is taken from the four sides of the tree. The tree selected must always be growing higher than the surrounding bush. The sap is collected, stored and can be sold at what is regarded as a high price, for this purpose.

Again the liana plays a part in ensuring "life" to the setts. In some parts of Moli 'alobirori' (unidentified) is split and opened out to form a circle round the setts before the coconut water is poured on them. In parts of Tetekanji, Valasi and Malango 'alomauri', 'alogulugulu' and 'alotaiveve' respectively are made to form an arch at some appropriate place, as under a big tree, along the path between the store house and the garden. A bundle of leaves can be placed in the ground under the arch (e.g. crushed leaves of Ipomoea learii and I. hemigraphis and sap from Cerbera manghas ('vuvunu') at Gold Ridge). The women bringing their baskets of setts to the new garden would pass with their loads through the arch. The vines are later thrown away in the river.

One Tetekanji man explained his father would sit over his setts holding a branch of Cordyline in each hand. One he would wave away to take any badness in the setts out to sea, the other he would fan inwards to bring goodness in. He gave the following spell:

Tao vutia raguna huli bau pepe
(something no good take out)(e.g. black skin
of the disease 'pepe')

Sivo gunia tasi vahurughari tasi nia
(go down to the sea where the waves of the seas
break)

Tao mainagea ma huli dou
(take back good)(healthy skin)

Tao maingea ma ka veibuali
(take back and make plenty)

Ma ka taivulea pericheke
(make the yams)(stand up big fella.)

If a man does not know the correct spells to say over the setts, he may pay a fee to have them said. At Balo a fee of one ten-inch string of red shell discs laid on each heap was quoted. Another price given was one 'onga', the less-valued white shell money. For people who cannot afford such fees, it is often possible to obtain permission to place a few setts on the piles owned by a rich man and to obtain the benefit of spells said over them. In some cases a sett is taken from each of the poor man's piles and placed in the pile which is treated. Then the returned setts can convey their power to the rest.

Transference of the "power" is seen in the custom that the women must never let their baskets of setts become completely empty. They always return for more setts from the heaps before the last one in the basket is used. Sometimes these baskets are decorated with ginger leaves.

When the Christian Church is strong, and a priest is resident, he is often asked to bless the setts and sprinkle them with holy water from the church. A priest may also say prayers for the success of the crop while standing at the top of the garden.

(d) Preparing the holes

The owner customarily digs the first hole. Sometimes a spell was said over the sharpening of the digging stick. One man at Nadoa used the same spell as was said when sweeping the garden with Cordyline after the horizontal divisions were laid (see above). Part of another spell given at Sauri was:

Pita na hambu vita na hambu
(ground blood separate blood)

Biri pita taulauka mana
(worm ground no good and)

Ana vatu na mana tolamate
(white ant nest and rotten stump)

(e) Planting the yams

Many of the old tabus are not now closely followed but they are nevertheless well-known and held slightly in awe, and are followed to some extent.

No menstruating or early pregnant women were allowed to work in a yam garden. The women were not allowed to eat on the day of planting until the work was finished.

Bark scrapings for spells were often taken from the east side of the tree.

For the most part, people must sing and be happy when at work planting the yams. Only two landholders, Phillip Nua near Kokona and Luke Irowai at Marau, said they would not allow their helpers to laugh, talk, smoke or chew betel nut when they were planting. Generally laughter and much chaffing to urge each other on is the order of the day.

One common tabu, however, is that the women must not stand still or look back when distributing setts in the garden; if they do, there will not be enough setts to fill the garden.

Planting the yams in pagan times was described as follows in Tasimboko. The priest has previously taken five small yams into which he has inserted slithers of the tree 'Komene' (unidentified) and planted them in the four corners and middle of the garden. On the day of planting, he comes into the garden with two cooked yams[1] and a betel nut. He places them on a tree stump near the middle of the garden. The women assemble with the setts ready to plant. He places his right foot in the section, ('kobe') and calls out "Iti mai, iti mai" (Come here, come here). The women assemble in front of him (none must be behind) and he asks how many sections, ('kobe') are ready with the setts laid out. He then says:

Kemini tavage kanago na gove
(May the holes increase the setts)

The women immediately, in silence, plant the setts in that section. The priest then repeats the same pattern in each section. The women must move systematically through the garden otherwise the yams will not grow straight. The leader will say the chant:

Kalonga nalua
(High tide come up)

Kasapu natavae
(Water floats)

Se Polo kukuango
(spirit of my father)

A freer interpretation was given: as the tide comes up and covers everything on the beach, so may the yams grow and cover this garden.

When the garden is planted, the custom man eats one of the cooked yams and chews the betel nut. The women may have the other. Then a big feast is held for payment of the work done, in which everyone partakes.

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[1] 'Kookoori' - some of the middle of the yam is scraped out and replaced with a mixture of coconut and 'pana'. This is covered and put back on the hot stones to cook again.

(f) Cultivation

Cultivation is only a matter of weeding once or twice, and staking, or providing tree debris for the vines to grow on.

When the time came to cut down the remaining trees, it was customary to rub down knives and axes with the leaves of the 'bubuli' (Ficus sp.) tree. The spell was said first with one hand on the tree whose leaves were to be taken for rubbing the axe blades.

The gardens can be protected by a number of prohibitions during the growing period. It is forbidden to touch a growing yam vine or it will die. Formerly, when approaching a garden, a person was expected to shout so that his presence was known, and nobody need fear he was sneaking up on the garden and meaning to do harm. One was not supposed to spit near a garden, as that showed bad intentions towards it.

After weeding, the garden may be regarded as "shut" and nobody may enter it until it is "opened" by the owner taking out the first fruit. At one garden in Marau, the women had to wipe their hands on the trunk of an Areca (betel nut) palm which customarily grew near the yam garden entrance, and over which a spell had been said. This was to ensure that nothing foreign was taken into the garden and/or anything removed. Tabus heard at Lambi were that anyone entering a yam garden must not just have come from the sea, as anything associated with the sea will kill yams. Similarly, some Longgu women were not allowed to eat fish or coconut at the time they were weeding.

If a person has touched a cadaver, he must first of all wash and then rub himself down with the leaves of Halfordia sp. ('riki') otherwise the yams will rot. At Lambi some people who go to work in the garden must not eat pig's leg or pig's blood, otherwise the leaves of the growing yam will turn black. Nor must people eat coconuts from a young palm, as its roots are not established yet and this would cause the yam roots not to become properly established.

If the vines were not growing well, many people in the past had a spell to counteract any slowness. One way was for the owner to walk along the fallen branches asking that the yams might similarly quickly cover the branches just as he walked on them. Or some branches were cut ahead of encroaching vines, as it was believed the yam likes to follow the noise. Quick growing vines such as Ipomoea learii, Mikania cordata, Rhynchosia sp., Merremia pacifica van Ooststr. are used at the western end of the island to tie up the yam vines at the four corners of the garden. This, it is said, will make the rest grow quickly and have good tubers.

One man at Lambi said that he inserted Desmodium ormocarpoides ('pindakoka') slithers into the first yam pushing up through the top of the ground and that this would bring all the other yams in the garden to a good size. In Valasi, the sight of a snake sunning himself on the fallen branches was a good sign, for the snake represents the spirit Poli and his appearance indicated that the garden would have good tubers. If, however, the snake was not seen, fish had to be caught and pigs killed for a small feast, some of which was offered to the spirit. After waiting two or three weeks, the garden would be dug as it was judged that the supplication would have been successful.

(g) Harvesting

As might be expected, harvesting is also a time for spells and tabus. The greatest traditional fear at the time of harvest is that people will be so hungry for the yams that the crop will be eaten all too quickly. On the south coast it was said that the following things were asked as the first yam was dug: that the people's bellies feel full, that their bodies feel weak, that they do not feel hunger for yams. One man from Tetekanji said that if, as harvesting approaches, a yam is removed and replaced by a mixture of Acalypha sp. ('bete'), Millettia sp. ('puga') and Gouania sp. ('alohai') scrapings, the garden "will not finish quickly"[1]. He said that seemingly when half is eaten, there will still be plenty of yams left, and that even in the succeeding season plenty of yams will remain in the same garden area.

Then come the ceremonies associated with the first fruits[2] in which the garden is made "open", that is the householders are free to dig and eat their yams as they want them. The first yam, a small one, would be dug by the owner of the garden, or in some areas by his wife, and cooked together with a small piece of pig and left at the place of the spirit of the forefathers. Later the owner and the priest would eat two other yams together. Only after this could others harvest yams from the garden. If this was not done, the spirit would be angry and spoil the garden the following year. At Inakona, it is said that if the flames of the fire flared up and burnt without attention, the offering was acceptable to the spirit.

At Marau the owner's wife would be ordered to collect the first yam which the pagan priest took to the sacred place. That evening a "pudding" using grated coconut and yam would be handed to the priest and after he had eaten, the yams could be harvested. It was, and still is, forbidden to eat pig with the first yams in one clan in Marau - only fish could accompany the first yams.

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[1] See above, "Preparation of Setts" for a "continuous supply of yam".

[2] See Appendix 8.

After these ceremonies, everybody would wait a few days and then the gardens could be harvested and eaten by anyone.

(h) Storage

Often a "bed" of leaves is prepared in the store house on which the yams are to rest. One gardener at Lambi took soil from four corners of the garden and placed it under the "bed" of Cycas leaves ('roe') which he said had power to preserve the yams. Another man at Kuvamiti, after laying down dry leaves of Pometia pinnata ('tau') said that he prayed to his father's line over two of the biggest yams which were placed on the leaves first, and that in the next season these would be planted last. This would "hold" the yams. At Marasa, it is regarded as best to have a floor in the storage house, or a snake may crawl across the yams which will cause them to turn black and die.

At Supatu, "to hold the life of the yams" the vine Derris ('vulunimuzu') was suspended above the yams lying in the house. The house itself can be "swept" of harm in Bambasu by waving, with one branch in each hand, Pterocarpus indicus ('lengi'). The branches are then hung at either end of the house.

Some owners (Valasi) still formally shut the storage house when they are satisfied that the yams are satisfactorily stored and no one may go near it until it is formally opened again.

XXII CONCLUSION

We have tried to describe yam cultivation as it is today, and as it was within living memory. It is felt that the decline of the importance of yams in the diet, in trade and in custom has proved to be as serious as first suspected.

Reference has already been made in the text to the decline in methods of cultivation. No man was found who could tell good yam ground by the smell, as was claimed their fathers could in the past (Chap. IV). The preparation of the garden is often affected today, not by the requirements of the yam, but by what the ground will be used for next, e.g. coconuts (Chaps. V and VII). People are no longer concerned with the appearance of their gardens (Chap. VIII). It was said if the setts were dried out first they would not be so liable to a rot, but nowadays the setts are usually put in the ground straight away (Chap. XIV).

"Our fathers weeded two or three times before, we only weed once", was a common remark. Yet it was agreed that yams are hard to grow and should be weeded. People often do not build storage houses today, but leave their yams heaped in the old garden (Chap. XIX). People have difficulty remembering the names of their yams. It can take five minutes' discussion by three or four people to decide the correct name of a particular variety. They assure you that an elder who is now dead, would have known. One old man in Valasi gave the names of two yams he considered important, but added that they have now been lost.

The reason for this falling off of cultivation is, of course, that yams are no longer the staple food of coastal Guadalcanal. They have been superseded by the sweet potato (Ipomoea batatas). Among the reasons for this are that sweet potato is quicker to mature, less demanding in soil requirements, produces more in units of ground and time, and generally requires less work (no weeding, no staking), nor is it necessary to reserve seed material. In many areas, yam growing was the traditional work of the men with assistance only from women. Nowadays, more men are working on cash crops or accept paid employment, often away from the village, and the time and labour required for yam cultivation is no longer available. Women remaining in the village can manage to grow sweet potato by themselves.

It follows, then, that there is no longer any urgency about growing yams. In the days when people were really dependent on their yearly yam crops, supplemented by taro, January, February and March (before the next year's yam crop was ready) were known as the hungry months. The old people remember this and comment that today nobody goes hungry. Sweet potato, followed by tapioca, is grown everywhere. Most people still grow one small garden of yams a year, and still have some taro but they are regarded more as supplementary, or even luxury, foods.

This is borne out by the high price of yams in the Honiara market, which is the principal centre of trade. In season, that is between April and September, yams sell for approximately 40 cents per kilogramme which increases to 60 cents later in the year.

Figures gathered by Murray Bathgate[1] at Honiara market surveys conducted between April 1971 and April 1972, and reproduced with his kind permission, show the following value of supply on two market days per month, at asking price of vendors[2].

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[1] M.A. Bathgate (Unpublished)

[2] Detailed table, Appendix 9.

Source	Malango	Paripao	Tasimboko	Sagalu & Savulei incl. Honiara	South Coast Tangarare
Yam	$127.50	9.00	36.40	28.60	114.80
'Pana'	$ 18.00	1.40	181.10	10.40	5.00

There are of course supplies of yams and 'pana' on days other than those surveyed. This applies particularly to supplies dependent upon shipping e.g. South coast when ships may not arrive in time for the two large market days per month. However, the days surveyed by Mr Bathgate are acknowledged as the best selling days, as they coincide with the fortnightly pay days; the survey would thus reveal the general pattern of the market if not the total value of yams and 'pana' offered over the year.

Mr Bathgate has also supplied us with other figures from his field work which support the general argument that these crops are declining in importance, particularly on the north coast. Mr Bathgate's figures apply to Taboko, a village in Sagalu ward eight miles west of Honiara and in road contact for fifteen years, and Verahue, a coastal village some 35 road miles west of Honiara and in road contact for less than a year.

Food Consumption by Meals and Meal Units

Type of food	TABOKO		VERAHUE	
	% frequency in all meals (700)	total meal units (14579)	% frequency in all meals (653)	total meal units (9033)
Yam	3.26	121	3.67	102
Pana	1.50	14	18.17	239
Sweet Potato	26.82	880	68.00	1850
Rice	30.58	1227	7.04	181(8)

The full table reveals more clearly the greater dependance of Taboko on imported foodstuffs but the above extract is sufficient for the purposes of this paper.

The garden data gathered by Mr Bathgate in May, June and July 1971 are also of interest.

	Taboko (in acres)	Verahue (in acres)
Area of current gardens	39.03	41.36
Area cleared but not planted	11.35	10.99
Average per capita area of current garden land	0.20	0.35
Area of sweet potato producing	6.30	12.88
Area of sweet potato not producing	5.68	9.71
Area of sweet potato producing per capita	0.03	0.11
Area of sweet potato not producing per capita	0.03	0.08
Area 'pana'/yam	1.79	5.97
Area 'pana'/yam per capita	0.01	0.05

Mr Bathgate notes that the decline in acreage in the Taboko area is due to concentration on market gardening, and consequent purchase of starch sources in the form of rice and biscuits. In fact, he notes that several couples within households at Taboko had no root crop areas at all.

One group of growers in Tasimboko producing yams for the Honiara market admitted to the authors that they ate sweet potato themselves. Visale women said they ceased to hold over seed yams when they became participants in the Honiara market.

If market forces operate, one would expect the yam to continue as a semi-luxury product with the bulk of supplies coming from areas further from Honiara, due to the good keeping qualities and the high value per unit compared to high transport costs. This is borne out by the Taboko figures, but on the plains of Tasimboko commercial growing of yams/'pana' may continue to supply a large proportion of the market unless oil palms are considered by local farmers to be a more rewarding crop.

The existence of other foodstuffs such as sweet potatoes during the "off" season for yams, the alteration in social activities produced by the Christian churches, and wage labour have all affected customary trade in yams on Guadalcanal. No longer do bush and coastal people meet on traditional market grounds to exchange yams for other products. But yams are still bought and sold for feasts, particularly on the south coast where they do still play an important part both in the social life and in the diet. There the people do not neglect to make their yearly gardens. At a recent (October 1972) opening of a new "office" at Makaruka by the Moro Movement, followers claimed that there were 7,663 yams to help feed the 2,000 guests. During the previous month there had been some trade in yams, as all adherents felt obliged to contribute yams towards the feast in accordance with their status, and purchased from outsiders if they felt they had not enough to offer. Further reference to the economic and social importance of yams within the Movement is to be found at Appendix 8.

Neglect of yam-growing is deplored by the older people, who recall the festive occasions associated with yam culture and that it was a more satisfying food than sweet potatoes[1]. Besides, a fine yam garden was something to be proud of, involving careful planning and work. Older people are shocked by some of the slovenly gardening techniques practised today.

Naturally they are disappointed too that the prestige value of large and numerous yam gardens does not have the same appeal as before. Yet younger people do acknowledge the value of yam as a food, and its important role in tradition. They profess ignorance of the types, of the old methods of cultivation, and of the rituals. They regret its decline, but at present appear unable or unwilling to stop this decline.

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[1] cf. E.L.Massal and J. Barrau, Food Plants of the South Sea Islands, 1956, pp.14, 25, and D.G.Coursey, Yams, 1967, p. 157.